

**SACRAMENTO METROPOLITAN  
AIR QUALITY MANAGEMENT DISTRICT**

**STAFF REPORT  
RULE 407 OPEN BURNING  
PROPOSED AMENDMENT**

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# RULE 407 - OPEN BURNING

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## Necessity For Amendment

The proposed amendments to Rule 407 OPEN BURNING are necessary to reduce particulate matter (PM<sub>10</sub>) emissions below federal health based standards. Other pollutants will be reduced to a limited extent, including reactive organic gases (ROG), oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO). The District currently violates federal and state PM<sub>10</sub> standards.

The amendment to Rule 407 was committed to by the District Board of Directors in the 1991 Air Quality Attainment Plan.

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## Background

The District's current Rule 407 was last amended in 1977. Rule 407 currently prohibits all non-agricultural open burning in:

- Areas north of Calvine Road;
- Sacramento County's four cities; and
- The communities of Courtland, Hood, Locke, Walnut Grove, Elk Grove, and Valley Hi.

Rule 407 is currently exempts:

- The open burning of refuse generated and burned on the premises of one or two-family dwellings located:
  - In the unincorporated portion of Sacramento County south of Calvine Road, and
  - Outside settled communities, such as Courtland.
- The cooking of food for human beings.
- Open outdoor fires for recreational purposes.
- Open outdoor fires set, authorized, or permitted by designated public officials to, among other things, instruct public employees in fire fighting methods, prevent pests and diseases, prevent or abate fire hazards.

The exemption for the portion of the county south of Calvine Road was originally provided because of the unavailability of refuse collection service in that area.

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## Public Workshop

The District held two public workshops. One was held on May 30, 1996 in the community of Herald, and the second was held on June 4, 1996 in the community of Walnut Grove. The District met with the Sacramento Fire Chiefs Association in March of 1996 to determine possible impacts and garner support from local fire chiefs. In addition, the District has worked extensively with the Aerojet Corporation to forge the revision to Rule 407.

In response to these workshops, the District has revised the Rule to meet the trash burning prohibition concerns of south county residents, the training burn concerns of the local fire agencies, and the PEP waste burning issue which face Aerojet.

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## SUMMARY OF AMENDMENTS

### Prohibitions

The proposed amendments are as follows:

- 1) The proposed Rule 407 would extend the non-agricultural open burn prohibition from Calvine Road to include the urbanized area of Elk Grove and Laguna.
  - 2) The proposed Rule 407 would prohibit the open burning of any materials on an "Agricultural No-Burn Day".
  - 3) The proposed Rule 407 would limit the open burning of propellants, explosives and pyrotechnics (PEP) at the Aerojet facility starting in 2002.
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### 1) "No-Burn" Line Extension

When Rule 407 was initially drafted, the entire area south of Calvine Road was rural in nature and sparsely populated. Increased development in the Laguna and Elk Grove area of the County has required that the no-burn prohibition be extended to include this area where development and open burn practices are not compatible.

Impact to residents is anticipated to be minimal as current burn practices are limited in the developed area encompassed by the Elk Grove and Laguna communities.

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### 2) Burning Prohibition on No-Burn Days

Currently, south county residents who burn yard clippings, household refuse and other materials, typically do so by obtaining an annual burn permit from their local fire department. By policy, most burn permits only allow residents to burn materials on Agricultural "No-Burn" days. Although this is largely the practice in the County, it is not the rule. The revision to Rule 407 which would only allow burning on "No-Burn" days, would create an enforceable and equitable regulation.

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### 3) Aerojet Burn Prohibition

The Aerojet Corporation currently burns approximately 250 tons of waste Propellants, Explosives, and Pyrotechnics (PEP) per year. Current burn practices are utilized due to the extreme volatility of the PEP materials and the resulting safety concerns.

The Aerojet Corporation is currently exploring PEP waste and off-site disposal alternatives. The desensitization process, when completed will result in a large portion of annual PEP wastes to be recycled, reused or desensitized to the point that other forms of treatment are possible, including off-site disposal. Current estimates indicates that by the year 2002, Aerojet Corporation would have developed the technology necessary to alternatively treat or transport off-site the vast majority of its existing PEP waste streams.

There are some materials that are manufactured, utilized or developed by the Aerojet Corporation which cannot be alternatively treated and which the U.S. Department of Transportation will not let be transported off-site. Aerojet

Corporation has expressed concerns that these types of materials which lack alternative treatments would present a safety concern. It is estimated that 5% of current waste streams comprise these types of materials. After 2004, Rule 407 allows Aerojet to open burn no more than 12.5 tons per year as long as the burned materials are comprised of those items which cannot be alternatively treated and cannot be transported off-site because of U.S. Department of Transportation regulations. Annual reporting requirements would require that Aerojet provide justification for this burning of these materials.

## EMISSIONS IMPACT

### "No-Burn" day prohibition

It is estimated that a regulation prohibiting open burning practices during "No-Burn" days will not result in any overall emissions reductions. It will however, limit the accumulating of pollutants in excess of federal and state health based standards by permitting burning to occur only on days when meteorological conditions favor dispersion. Little or no emissions will be reduced by extending the "No-Burn" line to the incorporated areas of Laguna and Elk Grove, because no burning is currently occurring in this area. The amendment to Rule 407 to extend the "No-Burn" line would preclude someone to burning in this populated area.

### Aerojet Facility

The emissions reduction associated with Rule 407 at the Aerojet facility for any given year depends upon the amount of waste materials burned during the year. Table 1 lists the amounts of materials that have been open burned at the Aerojet site from 1987 to 1993 and resulting types and quantities of emissions. It is estimated that PEP waste streams will continue near 250 tons per year until 2002 when the first reductions from Rule 407 will take effect.

TABLE 1: Emissions from Aerojet's Open Burning					
Tons/Year of PEP Waste Burned	Year	Pounds Per Year of Emissions*			
		CO	NOx	PM	HCI
1,123	1987	4,492	33,690	673,800	449,200
1,043	1988	4,172	31,290	625,800	417,200
774	1989	3,096	23,217	464,334	327,797
971 plus 186 incinerated	1990	3,884	29,130	582,600	388,400
677	1991	2,708	20,310	406,200	302,268
336 plus 75 incinerated	1992	1,344	10,080	201,600	134,400
204.5 plus 80 incinerated	1993	818	6,135	122,700	81,800

- a. This table assumes the following emission factors:
- 1) 4 pounds of CO emitted per ton of total PEP waste burned.
  - 2) 30 pounds of NOx emitted per ton of total PEP waste burned.
  - 3) 600 pounds of PM emitted per ton of total PEP waste burned.
  - 4) 400 pounds of HCl emitted per ton of total PEP waste burned.

Table 2 lists that maximum amount of PEP waste that could be burned in 2004. Also listed is the pounds of emissions reductions over current waste streams. The total emissions reductions may be greater if less than 12.5 tons of PEP waste per year is burned. Emissions factors are assumed to be similar as in Table 1.

Table 2: Rule 407 Emissions Reductions					
Tons/Year of PEP Waste Burned	Year	Pounds Per Year of Emissions			
		CO	NOx	PM	HCL
250	1996	1000	7500	150000	100000
12.5	2004	50	375	7500	5000
Reductions		950	7125	142500	95000

## COST/SOCIOECONOMIC IMPACTS

### Residents

Residents affected by the revision to Rule 407 are not expected to realize any increase in costs as the revision to Rule 407 will not prohibit the burning of yard waste and refuse. It will limit the times that materials can be disposed of by burning so that pollutant levels can not concentrate. Revision to Rule 407 will not significantly affect the residents of Laguna and Elk Grove, as burning practices do not occur there.

### Aerojet Costs

This cost effectiveness of this rule amendment has been determined by PEP disposal cost information and 1994 waste estimates provided by Aerojet. Aerojet has estimated that the costs for alternative disposal of PEP would range from \$2.30/pound to \$9.90/pound depending on what method of disposal is utilized and the particular characteristics of the PEP that is being disposed. Table 3 lists the cost per pound of each pollutant being reduced at the lower and upper range of each disposal costs.

Table 3: Costs per Pound of Pollution Alternatively Disposed*				
	CO	NOx	PM	HCl
Low Range	\$1,305	\$173	\$8.70	\$12.05
High Range	\$5,295	\$704	\$36	\$52

\*Using 1994 waste stream types and amounts. Specific waste streams and amounts are proprietary.

Certain materials can be recycled, reused while other waste streams can be reduced. For example certain materials can be resold as commercial explosives, which further reduced the costs for alternative disposal. While the costs for disposal will increase for Aerojet, it is anticipated that Aerojet will utilize the most cost effective method of alternative disposal.

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**District Costs**

The revision of Rule 407 will not require additional District staff or resources.

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## **ENVIRONMENTAL REVIEW AND COMPLIANCE**

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**Environmental**

Pursuant to state CEQA Guidelines (Section 15308, Action by Regulatory Agencies for Protection of the Environment) the District's environmental coordinator finds that the amendments to Rule 407 are exempt from CEQA. The rule, as amended, will place additional restrictions on open burning over the existing rule. The amended rule will reduce pollutant emissions and improve air quality, a beneficial impact. The rule does not require or allow for emission control equipment that may cause secondary impacts as a compliance alternative.

California Public Resources Code (Section 21159) requires an environmental analysis of the reasonably foreseeable methods of compliance. The environmental coordinator has concluded that no reasonably foreseeable environmental impacts will be caused by adoption of the amendments to Rule 407.

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## TABLE OF FINDINGS

### Six Required Findings

According to Section 40727 of the California Health & Safety Code, an air district board may not adopt, amend, or repeal a rule unless the board makes six specified findings. The findings must be based on relevant information presented at the board's hearing for the rule. Table 4 below sets forth these findings, their definitions, and the findings' bases.

TABLE 4—Required Rule Amendment Findings		
FINDING	DEFINITION	BASIS FOR THE FINDING
Authority	The District is permitted or required to adopt, amend, or repeal the rule by a provision of law or a state or federal regulation.	The Health and Safety Code grants local air districts the authority to adopt rules and regulations to reduce air pollution (H&SC 40000, 40001, 40702 and 41010).
Necessity	The District has demonstrated that a need exists for the rule, or for its amendment or repeal.	The District needs this amendment to implement its <i>Sacramento 1991 Air Quality Attainment Plan</i> , to abate a public nuisance from the emission of HCl into the atmosphere, and to improve air quality by reducing particulates emitted by open burning, especially PM.
Clarity	The rule is written or displayed so that its meaning can be easily understood by the persons directly affected by it.	No evidence suggests that persons directly affected by the Rule 407 amendments cannot easily understand its meaning.
Consistency	The rule is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.	Other than Rule 407, as proposed, no federal/state statute/regulation and no court decision imposes or prohibits the specified fees.
Non-duplication	The rule does not impose the same requirements as an existing state or federal regulation, unless the District finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon the District.	The proposed rule duplicates no state or federal laws or regulations.
Reference	Any statute, court decision, or other provision of law that the District implements, interprets, or makes specific by adopting, amending, or repealing the rule.	This rule amendment implements HSC Section 40913, which requires the District's attainment plan to achieve and maintain state air quality standards. This rule amendment will also serve as an implementation measure for the District's proposed plan for reducing PM. The amendment also helps to abate a public nuisance from HCl emissions, pursuant to HSC Section 41700.